California 9-1-1 Advisory Board
Long Range Planning Committee
9-1-1 Workgroup
Wireless Routing - Scope of Work

The following Scope of Work was developed by the 9-1-1 Workgroup with review and input from the Long Range Planning Committee, in order to provide the 9-1-1 Advisory Board, and the 9-1-1 Branch specific deliverables for the selected vendor's software programs. The 9-1-1 Workgroup believes these deliverables, when implemented, will assist 9-1-1 professionals in making more effective routing decisions. Software of this nature is necessary until such time as routing on highly accurate Phase II latitude/longitude caller location is available. For the purposes of this project the data set will be one year of call data from Santa Clara County.

Deliverable 1 - CHP and PSAP Boundary Shape Files

1.1 CHP in partnership with the Santa Clara County Coordinator will provide shape files depicting Santa Clara County, incorporating all PSAP boundaries, including the CHP highways and freeways and deliver to California 9-1-1 Branch for distribution to the vendors.

1.2 Wireless ESNs will be included in the shape files with Star codes including English translation.

1.3 California 9-1-1 Branch will request Routing Tables from Intrado and T-Mobile, and the Star Codes from AT&T and provide to the selected vendors.

Deliverable 2 – Routing Analysis

2.1 Determine average Primary PSAP to Primary PSAP transfer rate for Santa Clara County PSAPs based on Phase 1 and Phase 2 data. Provide a report when either of the following occur:

- A transfer rate for any given sector exceeds 10% of the average transfer rate for the PSAP
- The transfer rate exceeds 50% for the sector

2.1.1 Average transfer rate includes Primary PSAP to Primary PSAP only.

2.2 Provide summary reports for every cell sector, which include:

- total calls received
- total transferred
- percentage transferred

2.2.1 Report will include a list of PSAPs transferred to and total transferred to each PSAP.

2.2.2 Report will contain a filter option to identify and sort all data, as well as Secondary PSAPs.

2.2.3 Reporting capabilities will provide various time frame options including hour, day, week, month and year.

2.3 For every cell sector, provide a summary report of all calls transferred to the PSAP that identifies the PSAP that originated or transferred the call.

2.3.1 The information shall include total calls received, transferred, and percentage, as identified in section 2.1, of calls transferred total.

2.3.2 The information available for each sector shall include total calls received, total transferred and percentage transferred.

2.4 Provide an exception report that identifies W911 and WPH2 call data including the percentage of W911 and WPH2 calls by sector.

2.5 Provide an exception report on the accuracy of tower/sector information:
- Ensure there is a street address for each tower
- Identify any errors such as the ALI data not matching the Lat/Long or MSAG street and numeric address as listed in the routing tables.
- Ensure the accuracy of the sector directional (identify any errors such as the address directional and/or lat/long not having matching data in the routing tables)

2.6 Azimuth error reporting - Using the sector directional and azimuth, provide a summary report by sector that provides the percentage of calls that may have originated outside the expected sector coverage.

2.7 Provide a consolidated maintenance report that shows routing errors. Filter by date range, carrier, error-type (i.e., ESN error, Carrier went live without preapproved routing, Azimuth error, etc.).

2.8 Provide a report listing all cell sectors assigned to a PSAP.
2.8.1 Report will include, Tower Address, Sector, Carrier.

2.9 Provide a report that identifies the wireless sectors within a PSAP's boundaries that are currently being routed to a different PSAP.

2.10 Based upon 9-1-1 Phase II (Class of Service WPH2) call origination data (latitude/longitude), provide a report that quantifies the number of calls within each PSAP jurisdiction that are currently routing to a different PSAP.

2.11 Develop reports/process that verify routing recommendations were implemented, (i.e. identify errors such as - the recommendation was ESN 501 and when tower goes live the first call routes to ESN 510).

<u>Deliverable 3 – Data Plotting</u>

3.1 For all wireless service providers, vendor will depict call data for each cell sector and plot calls visually on a geographic map.
3.1.1 Phase I calls should not be plotted - plot Phase II calls only.

3.2 Visualization capability to include the ability to select flat map and 3D satellite base maps.

Desirable Features of a Long Term Solution

- Develop a workflow that will allow, at a minimum, PSAPs to make automated routing change recommendations and send to the CHP/County Coordinator for their response. If approved by all parties then notify carrier through interactive routing portal.
- Monitor for routing change completion. If no call has been received, or routing ESN has not changed after 30 days, send automated notification to the PSAP, CHP, County Coordinator, State 9-1-1 Office, and Carrier.
- Establish an online portal for wireless carrier to load routing requests. Portal shall display current status of routing requests as well as historical information of that request. Portal shall be accessible to the PSAP, CHP, County Coordinator, State 9-1-1 Office, and Carrier.
- Create an interactive tool for County Coordinator, CHP and PSAP Manager to review carrier initiated routing request (maintenance or new sectors) and make recommendations. Once a final recommendation is completed, in accordance with established business rules, an automated routing sheet/notification is sent to the wireless carrier with the approved information. If recommendations are not in agreement provide notification to County Coordinator and CHP that further review must be completed. Automate the filing of the response of the routing recommendation sheet and provide an automatic response to the wireless carrier.
- Provide automated routing suggestion on new site and describe decision-making methodology.
- Provide immediate automated notification of ESN failure; e.g. historically ESN 501 has been active, however and suddenly ESN 501 is no longer active or routing appropriately.
- Provide automated ESN report 30 days after a new tower has gone live, and anytime there is an ESN change.
- Provide automated immediate notification of ESN change or anytime a new ESN is detected without a corresponding currently approved routing sheet.
- All notifications in this section are to be made to the PSAP, CHP, County Coordinator, State 9-1-1 Office, and Carrier. **Information will be provided as the most accurate information the California 9-1-1 Branch has available to them.*
- Any and all call data from 9-1-1 calls that traverse a PSAP shall be available to the PSAP from onset to termination.
- Automatically generate an Azimuth error report – If directional show N on routing sheet but the data is coming from the S, automatically generate a report and send to the PSAP, CHP, County Coordinator, State 9-1-1 Office, and Carrier. **Information will be provided as the most accurate information the California 9-1-1 Branch has available to them.*
- Provide an automated maintenance report that shows consolidated routing errors. Filter by date range, carrier, error-type (i.e., ESN error, Carrier went live without preapproved routing, Azimuth error, etc.).
- Provide the ability to review a call from initial PSAP to final PSAP with all points in between.
- Deliverable 2.1 should be an automated report for the long term solution.